Business

Budgeting

IN THIS ISSUE

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INVENTORY CONTROL
FOR MANAGEMENT

Budgetary controls extended to inventories should be based on the
latest scientific methods. But, as the author proves, the latest scien-
tific method is oftentimes merely an extension of a well founded
system established long ago. This, of course, only serves as an in-
troduction to a sound study of "Analytic Inventory Management."
The article contains the necessary formulae (fully explained) and the
necessary charts for clarification and easy comprehension of modern
inventory control procedures.

In the modern-day business world, increased
competition demands better service to customers
and, in most cases, this means more inventories.
Increased mechanization and more automatic
machinery also often generates the need for
larger inventories. So we have before us an ever-
increasing problem: the problem of maintaining the
inventories that virtually every business demands.

Typical of practices commonly adopted in the
search for ways to control inventory is the con-
cept of "turnover". The origins of the turnover
concept are lost in pre-history, but one can im-
agine some Babylonian camel merchant coining
"turnover", or its Arabic equivalent, as the reason
why his fellow merchant across the square man-
ages to sell two camels a day, with a stock of
ten, while he only sells one a day from a stock
of twenty. By inventing the word "turnover", he
managed to avoid the fact that his competition
either had better camels, lower prices, better
sales ability or perhaps merely a shady spot in
the market that made the camels look better.
Whatever the cause, the fact remains that turn-
over was only a means of expressing the volume
of sales in comparison with stocks maintained.

Unfortunately, although industry has come a
long way from the Babylonian market place, the
concept of turnover is still the same. Even worse,
lack of a better concept has forced people to rely
on turnover as a control device, frequently devel-
oping elaborate mechanisms for historical com-
parison, line by line breakdowns, and similar
elaborations that add complexity and cost, but
still contain the inherent lack of usefulness as a
control medium that turnover represents. It pro-
vides us a measure of inventory in relation to
sales, so we assume the measurement serves as
the basis for a control medium. This is far from
true.

Measurement of inventory in relation to sales
serves as valuable financial index, when used
broadly, by indicating the velocity with which
capital is being utilized. The temptation to use
this index as a control mechanism is what creates
pitfalls, since it fails to satisfy the conditions

needed in a management control mechanism. The conditions which a control mechanism must fulfill are to provide accurate answers to the following questions:

1. How much adjustment in present conditions must be made?

2. Where should these adjustments be made?

3. What effect will adjustments have on management's policies and objectives?

In this respect, an inventory control device is the same as any other control device. Budgetary controls over operating expense must meet the same criteria. They must not only show whether expenses are out of line in comparison with past history, but they must also show how much they are out of line and in which specific expenses these out of line conditions prevail. Furthermore, proper administration of a budgetary control must recognize the effect of actions on management's policies and objectives.

OBJECTIVES IN INVENTORY CONTROL

Our objectives in inventory control consequently must be substantially more than mere measurement of inventory investment, or the relating of such a measure to some other measure of activity. Re-phrasing the criteria just discussed, we can state that true inventory control demands the following:

1. A means for translating the policies and objectives of management that affect inventory into a specific inventory policy.

2. A means of translating these inventory policies into specific actions governing the items that comprise the inventory.

3. A means of accomplishing these specific actions.

These are our objectives in inventory control. The means whereby these various objectives are accomplished have been given the term "scientific" inventory control in recent years. This term may be misleading, however, because of the implication that "scientific" methods involve some complex and involved procedures. This also is far from true. Inventory control that meets all these objectives can be achieved by relatively simple and uncomplicated methods. For this reason, we prefer the term "Analytic Inventory Management", a term recognizing the extensive background of business analysis that has culminated in present-day practices.

MODERN INVENTORY CONTROL

Modern inventory control is directly descended from Frederick Taylor's management movement. It was, in fact, during the installation of the Taylor System of shop management at the old Franklin Automobile Company that the first recorded attempt was made to use engineering principles for in-

ventory control. This was back in 1912, forty-seven years ago. In the intervening years between 1912 and the present, many an application and much literature has been added to the body of knowledge on this subject. The last ten years have been especially fruitful in the production of new ideas and new methods. It is fair to say that more progress has been made in inventory control during these few years than in all previous thirty. But, of this progress has been the loss of simplicity. And, although many of the recent developments are quite valuable, businessmen are not likely to use them so long as they do not understand them. They must still be translated into practical terms, or else they shall remain nothing more than intellectual curiosities.

A recent report of a broad study of inventory control practices throughout industry determined that two major aspects of the inventory problem today were:

1. Management is generally dissatisfied with its control over inventories. They believe they should be able to manipulate inventories to better suit their needs.

2. The second aspect was that executives do not have available guiding principles on which to base their day-to-day inventory decisions. Of course, every company has "rules-of-thumb" but these are not reliable for more than the most rudimentary of inventory problems.

This, then, leaves us in the position of having worked for more than forty-six years to produce rather meager results.

This lack of substantial progress is caused, not by inadequacies of techniques available, but by a lack of understanding on the part of management as to how these techniques operate, and how they relate to inventory objectives.

Simply stated, the basic purpose behind any commercial or industrial inventory is to improve profit. Improvements in profit can be generated in either of two ways: reduction in cost, or increase in revenue. Either one may occur over either a short run, or a long run period. Consequently, we have four areas of inventory usefulness: to reduce cost over either a short-run or a long-run period, and to improve revenue over either a short-run or a long-run period. To serve each of these areas of usefulness properly, we consequently need four different types of inventory objectives. These are shown in Figure 1.

LONG RUN OBJECTIVES

The first one shown on the chart is the Equilibrium Objective. This is related to the reduction of long-run or continuing costs. The goal here is to keep an organization running smoothly by permit-

INVENTORY OBJECTIVES

	LONG-RUN	SHORT-RUN
FOR REDUCED COST	EQUILIBRIUM	STABILIZATION
FOR INCREASED REVENUE	SERVICE	SPECULATION

FIGURE 1

ting each department to operate somewhat independently of the others through the proper use of inventories. If the purchasing department, for example, were not allowed to buy materials in advance of the time they are actually needed, then you would have nothing more than bedlam in your plant. But by permitting materials to be brought in days and even months ahead, clerical work can be made routine, better prices may be obtained from suppliers and so on. The same concept applies to the manufacturing division, of course. By producing in advance of sales, we obtain longer production runs and are better able to schedule.

The Service Objective was classed with the long-run improvement of revenue. The aim here is to encourage customer confidence by providing reasonable assurance that goods will be available when ordered. This, of course, also helps to minimize back orders and cancellations.

SHORT RUN OBJECTIVES

The Stabilization Objective has to do with the reduction of short-run costs. This refers to provisions for smooth patterns of activity that avoid the excess costs that attend variations in production. Here, for example, we would class the sort of inventories that are built up during periods of low sales in order to avoid overtime during heavy seasonal shipments, or to permit the work force to remain constant or relatively constant in size.

The Speculation Objective concerns the type of thing that you encounter when you have style changes or marked seasonal elements. We have used the word "speculation" to call attention to its risk aspects. The manufacturer of dresses, for example, makes a certain number of pieces in the

Spring to be sold during the following Fall on the basis that he is likely to sell so many. Those that are not sold must be disposed of at reduced prices; if not enough are made he will be foregoing opportunity for profit.

For illustration of the framework for the entire field of inventory management, let us take a closer look at the long-run objectives on our chart: Equilibrium and Service. The remaining short-range objectives of inventory management, Stabilization and Speculation, constitute more specialized problems than the long-range objectives and consequently have more limited application.

Each of these objectives has a means of accomplishment. In the case of the Equilibrium Objective, the means is through working stocks; in the case of Service Objective, the means is buffer stocks, or stocks of goods sometimes referred to as the safety balance.

The objectives also have a method by which the means are generated; reordered quantity generates the existence of working stocks, reorder levels generate a safety balance.

Furthermore, each objective has a separate technique by which the method can be quantified, and a separate policy which influences the technique. These are summarized in Figure 2.

This chart has proved interesting in several ways. We find that it helps to categorize and coordinate what is otherwise an untidy body of information. The various bits and pieces found scattered throughout the technical journals these days appear to fit rather well into this framework.

For better understanding of what is meant by some of the terms used on Figure 2, let us look

at a model demonstrating what happens to generate the existence of inventory on a given item, piece or part. Simply stated, inventory exists because the piece, part or item is brought into a state of usefulness in larger quantity than the quantity by which it is removed. This process generates a "sawtooth" pattern of increases and reductions in the quantity of stock on hand in relation to time as shown in Figure 3.

ANALYTIC
INVENTORY MANAGEMENT

OBJECTIVE	MEANS	METHOD	TECHNIQUE	POLICY
EQUILIBRIUM	Working Stocks	Reorder Quantity	Minimize TVC* of replenishment	Inventory Budget
SERVICE	Buffer Stocks	Reorder Level	Minimize TVC* of stockout	Service Standards
STABILIZATION	Anticipation Stocks	Production Plan	Minimize TVC* of changes in production rate	Production Budget
SPECULATION	Demand Stocks	Reorder Schedule	Minimize maximum expected loss	Price Schedule

*TVC stands for "Total Variable Costs."

Figure 2

THE WORKING STOCK CYCLE

"Q" IS THE STANDARD LOT QUANTITY
"1/2 Q" IS THE AVERAGE WORKING INVENTORY
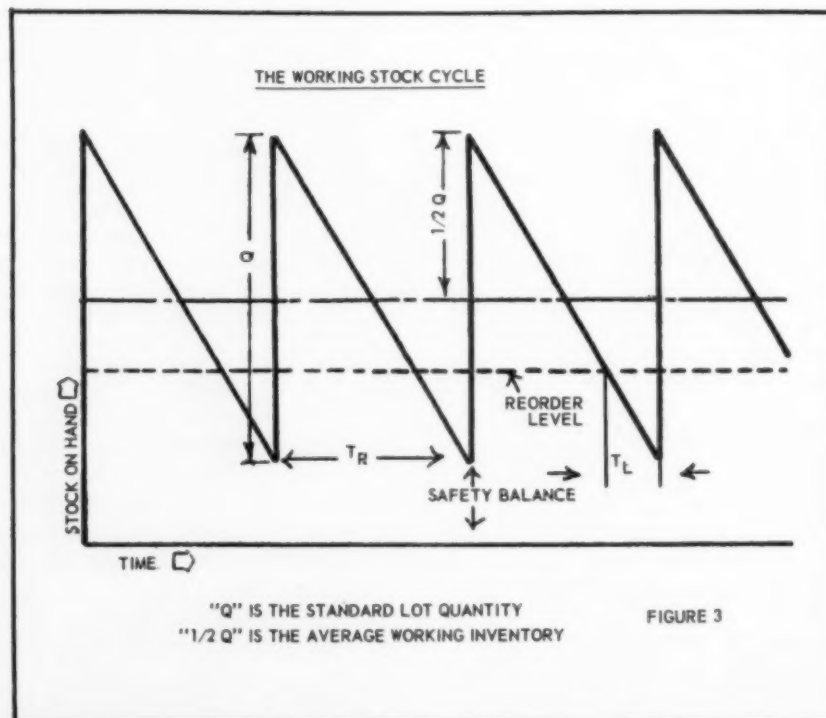
FIGURE 3

There are six basic elements of this model:

1. The replenishment quantity "Q", which is the standard lot quantity.

2. The rate of consumption or rate of sales ($\overline{S}$), represented by the slope of the downward portions of the pattern.

3. The safety balance or buffer stocks (B), which represent the amount of stock retained even when working stocks reach zero.

4. The average inventory (I_{av}) which exists because of the working stocks and the buffer stocks.

5. The reorder level (L) which is the point in stock position at which a reorder is required if we are to obtain stock replenishment at zero working stock as a result of a lead time T_L.

6. The time between replenishments of stock which we designate as "replenishment time, T_R"

Examination of the chart demonstrates the simple, logical derivation of certain formulae used in the computing of these values. These are:

1. $Q = \overline{S}T_L$ which is a mathematical equation expressing the fact that the replenishment quantity must be equal to the demand between replenishments.

2. $I_{av} = \frac{1}{2}Q + B$ which describes the fact that the average inventory carried will be or $\frac{\overline{S}T_R}{2} + B$ one half of the replenishment quantity plus the safety balance.

3. $L = \overline{S}T_L + B$ which describes the fact that the reorder point must occur when stocks equal the demand during the reorder lead time plus the safety balance.

These few simple equations actually define the working stocks required and permit us to quantify every aspect of our model (except safety balances) if we know certain things:

1. The rate of sale $= \overline{S}$

2. The replenishment quantity–Q or the period between replenishments T_R

3. The lead time T_L

The rate of sale is always a known quantity or can be estimated. So, also is the lead time. The value for Q can either be determined from knowing the rate of replenishment, or can be calculated from economic lot size considerations.

Various formulae for economic lot size are presented in standard reference sources. However, all these formulae are based on the conditions demonstrated in Figure 4.

"T. V. C."

TOTAL VARIABLE COSTS

POINT OF LEAST
TOTAL VARIABLE COSTS

CARRYING COSTS   PREPARATION COSTS

DOLLARS

NUMBER OF UNITS MANUFACTURED

MINIMUM "TVC" WHERE CARRYING COSTS
AND PREPARATION COSTS ARE EQUAL

Figure 4
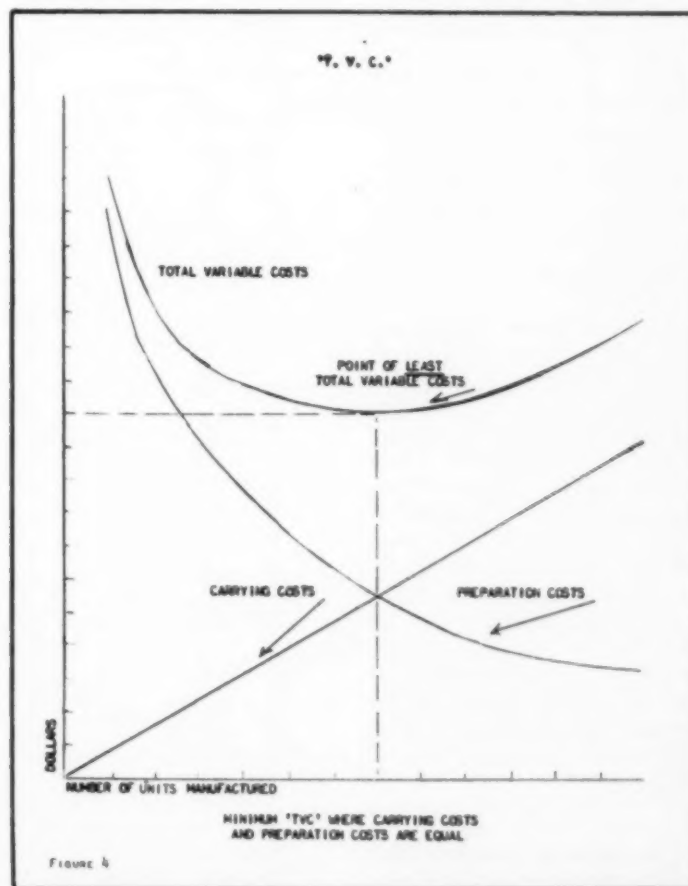
The economic lot size occurs at the point where the minimum occurs for the combined costs of carrying the inventory resulting from the lot size, and the costs generated by preparation aspects of the lot run; i.e., ordering, set-up transport and such. These latter costs decrease geometrically as the size of the lot increases. The former costs increase arithmetically as the size of the lot increases. The sum of the two (represented by the top curve) reaches a minimum at the point where the two cost curves cross. By this means, we arrive at the format for a minimum cost computation. Mathematically, this can be expressed as:

$$Q_c = \sqrt{\frac{2DP}{VC}}$$

where Q_c = Economic lot size

D = Annual demand in units

P = Preparation cost per lot

V = Value of item per unit

C = % annual inventory carrying charge

This is all there is to the problem of working stocks. We can define the proper lot size which, when rated to demand, tells us the frequency of replenishment. Actually, there are certain ramifications that involve certain additional mechanisms. For example, one is the problem of seasonal variations in demand. Another ramification is the problem of adjusting lot size if the total "ideal" inventory exceeds limitations of space or capital availability. These mechanics, however, are merely methods whereby these principles of determining working stock inventory requirements are adapted to suit certain special conditions.

SAFETY BALANCES

Safety balances, or buffer stocks are a different problem because here we deal with the element of uncertainty. Safety balances would not be required if we could be certain of two things: that material or goods would be sold or consumed at exactly the rate expected, and that replenishments would come in at exactly the time expected. In practice, we are rarely, if ever, certain of these things, and so we establish a buffer stock, whose size determines the degree of protection provided.

Fortunately, even uncertainties follow known laws. These we term the "Laws of Probability". Application of the Laws of Probability to inventory problems means we want a certain degree of assurance that a stockout will not occur, or putting it another way, we wish to limit stockouts to a definite level of probability.

Stockout opportunities prevail only when working stocks approach depletion, which occurs only at the period near each replenishment. Furthermore, a stockout occurs on an order basis; that is, an item may be in stock, but if the number of pieces available does not equal the pieces on order, the order is short and a stockout occurs.

This means that the factor affecting the rate of stockout is the number of orders between replenishments. In almost every practical circumstance, this value is comparatively small which means that the Law of Probability applying to uncertainties in this value is the Law of Probability covering infrequent occurrences.

This Law of Probability is known as "Poisson's distribution" and involves, as any Law of Probability does, a fairly complex formula involving exponential functions. We are fortunate however, in one aspect of this law; that is expressed as follows: the standard deviation of Poisson's distribution is equal to the square root of the mean. This, taking all the technicality out of the picture, means that if we know the average number of orders between replenishment, we can predict the probability with which any other number of orders will occur. Tables of these probabilities have been computed, and are currently being used in many industrial applications.
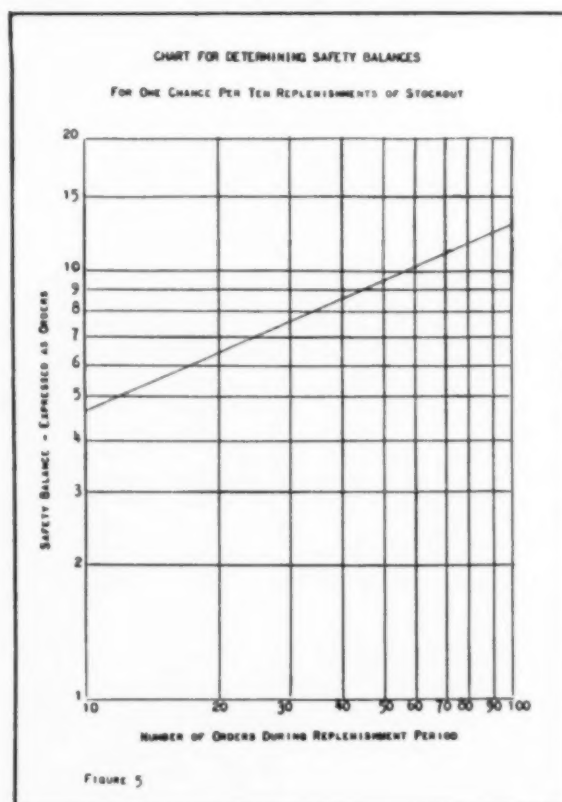
Figure 5

Typical of the conditions shown by these tables is the chart shown as Figure 5. Based on the aforementioned tables, this shows the safety balance needed for one stockout every ten re-

plenishments for a range of orders between re-plenishment from ten to one hundred. Safety balances are expressed in orders worth. To obtain safety balance in units, we merely have to multiply by the average order size.

Thus, with this chart, the safety balance needed within this range of conditions can be determined and we can complete the equations stated before (for average inventory, and for reorder level) in which safety balance size is a factor of the equation. Control over this aspect of inventory is now possible because we have established, with exactness, the element needed for control. Stated above – this was "a means for specific action to control inventories". This means is established because we know, for a given item, how much should be reordered to replenish inventories, and we know at what point of stock position this reorder must be placed. We consequently have the familiar type of inventory control, with minimum stock levels (reorder points) and reorder quantities. But this is a control with a difference; instead of arbitrarily or intuitively selected values, the values used are calculated, calculated so as to apply management's policies and objectives to the values utilized.

Actually, there are further ramifications to this whole problem. Regretably, space will not permit us to cover all these situations. One point, however, may serve to illustrate the means whereby these aspects can be included in the computations by means of a simple device we call "The Safety Balance Multiplier".
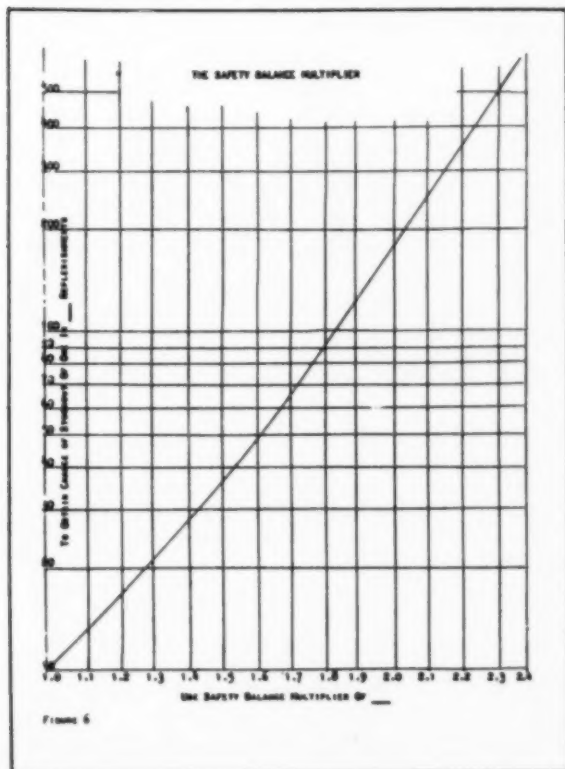
Figure 6

The chart just discussed (Figure 5) was developed to provide safety balance that would give one chance in ten replenishments that a stockout would occur. Many times this level of probability would not be suitable to meet managements' policies of service. However, it is not necessary to develop another chart or charts for the specific service level or levels that management desires. Instead we can substitute another, single, chart which will permit us to utilize the first chart (Figure 5) to select a basic safety balance for a one in ten probability, and then utilize this second chart to provide an adjustment factor: the safety balance multiplier. This latter chart is shown as Figure 6.

The advantages of this chart are numerous. Take for example, a condition where management wishes stockout frequency no oftener than once every five years. On an item replenished twice a year a probability of one in ten replenishments are needed. On an item replenished four times a year, one in twenty, and on an item replenished ten times a year, probability of one in fifty is needed. With these two charts, we can then use the first chart to select safety balance needed for each item (with a "p" of one tenth), and select the appropriate multiplier for these safety balances from the second chart.

The safety balance multiplier enlarges usage and simplified mechanics in other ways as well. Some of these are:

1. A chart can be developed that will give a direct reading of the safety balance multiplier needed to "optimize" the size of safety balance, or in other words, to select the safety balance multiplier that will give the best relationship between losses caused by stockouts and costs of carrying inventory.

2. A chart can be developed to provide the necessary addition to safety balance multipliers to allow for uncertainties in the lead time period.

3. A chart can be developed that would provide the necessary addition to the safety balance multipliers to allow for random variability in size of order should that condition prevail.

THEORETICAL CONDITIONS?

These charts are not merely a theoretical condition. All of these have already been developed and put into successful use in various applications. Description of these, however, would not be warranted, as they fundamentally serve only as means whereby the mechanics involved in inventory control can be made to suit the conditions of a specific application. Our objective has not been to demonstrate the successful application of Analytic Inventory Management to a set of conditions. Such conditions could differ entirely in any particular installation. It has been, however, to demonstrate that scientific inventory

control practices need not be complex and theoretical.

By Analytic methods, mechanisms can be established which will give exact translation of management's policies into specific, item by item specifications for inventory control that are practical for virtually any inventory in any size organization. If economic control over the individual items in an inventory is established, actual control over the whole of that inventory is achieved. The Euclidian axiom that a whole is equal to the sum of its parts applies equally to the subject of inventory as it does to geometry.

Analytic Inventory Management has opened a new opportunity for organizations previously unable to achieve real control over the elements of operations planning. No longer is it necessary to fall back on mechanisms which are known to be lacking in validity, but which must be used for lack of some practical method of inventory planning. The various principles and practices described above can easily be combined into a simple set of precise rules that will assure balanced inventories, maintain inventories in line with managements objectives, and furnish the basis for accurate, economical operations planning and control.

CAREER FORUM
held at Philadelphia

Left to Right: G. Ralph Guthie, Jr., George W. Jackson, R. Visscher Millar, Gordon J. Sevold

The PHILADELPHIA Chapter's "Career Forum" was held at the Sheraton Hotel, March 10th, for members of the faculty and interested graduate and senior students from the several leading universities in the area.

Three panel speakers covered the Budget Director's job, in three sections, followed by open question and discussion periods:

1. The educational, personal, and working experience requirements of the Budget Man's job.

2. The Budget Man's place in the organization, his status, the job he evolves from and into,

salaries in large and small organizations, his line in advancement.

3. The advantages and rewards of the job, the disadvantages and frustrations, and the outlook for the future.

Panel members were G. RALPH GUTHRIE, JR. of I.T.E.; R. VISSCHER MILLAR of Pennsalt; and G. W. JACKSON of Electric Storage Battery Company. Guiding the meeting and active discussions was able Chairman of Special Activities, GORDON J. SEVOLD of Frank H. Fleer Corporation.

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LONG RANGE PLANNING

Perhaps one of the best ways to illustrate the manner in which LONG RANGE PLANNING is carried out is to present case studies on the subject. The author presents two specific problems and solutions in this article. One deals with the demand for rubber chemicals and the other for dye stuff for the textile and paper industries. Despite the specific nature of the illustrations, the readers will find great value in reviewing the practical methods and procedures utilized in the LONG RANGE PLANNING program outlined by the author.

We all realize that we live in a century of phenomenal growth and momentous technological changes. Since 1900 the population of the US has risen by 100 mill. and Gross National Product, expressed in stable dollars has increased 6 fold between 1900 and 1958. In 60 years the world has witnessed a transition from the horse and buggy time to the jet plane and rocket age.

In order to survive in this time of constant changes, a Company must keep pace with the growth of the economy and it must adjust itself to the technological progress and to new competitive situations. This is done by a function which we call "Long Range Planning". Its ultimate goal is to determine what new products should be added to our production program and what new plants and of what size should be built in order to achieve the maximum return on our investment without running undue risks. The premise for this investment planning is a prediction what course growth will take. We must seek an answer to the question: What markets will grow in the future and what goods will be in demand?

In order to arrive at a well integrated long range plan it is necessary to organize this function. It will be the responsibility of Top Management — or in very large companies of a Central Planning Department, to which this authority is delegated — to develop a procedure to be followed by the Operating Divisions, which are responsible for implementing the plan.

This procedure should spell out the main steps to be taken, such as end consumer and product line analysis, based on trendline and correlations, reflection of technological and competitive changes, a decision if forecasts should be made in present dollars or if it should be attempted to reflect probable price changes of raw-materials and finished goods and expected increases in wage rates. Furthermore, as return on investment is the most important criterion the method for determining it should be defined clearly. Last but not least, care has to be taken that the information which was compiled by the operating divisions flows freely to Top Management which evaluates and coordinates the projections of the operating divisions.

However, rather than indulging in a detailed description of methods and procedures, I would like to demonstrate with the help of a few case studies, through what motions we have to go and what steps have to be taken.

CASE STUDY NO. 1

Let us assume that we want to determine what the prospects for the next five years are for a group of organic chemicals, used in the vulcani-

zation of rubber, which we want to call Rubber Chems." "A"

The end consumer analysis is simple in this case because the usage of these rubber chemicals is tied exclusively to the consumption or rubber. Therefore, our first step will be that we try to develop a long range projection for rubber consumption. This can be done by calculating a trend-line or by establishing a correlation with an important economic index.

On chart 1 we see the new rubber consumption in LT plotted for the years 1929 through 1957. The broken line represents the trendline since 1929 and the solid line the post-war trendline, which were determined mathematically. The method is demonstrated on the following tabulation for the post-war trendline:
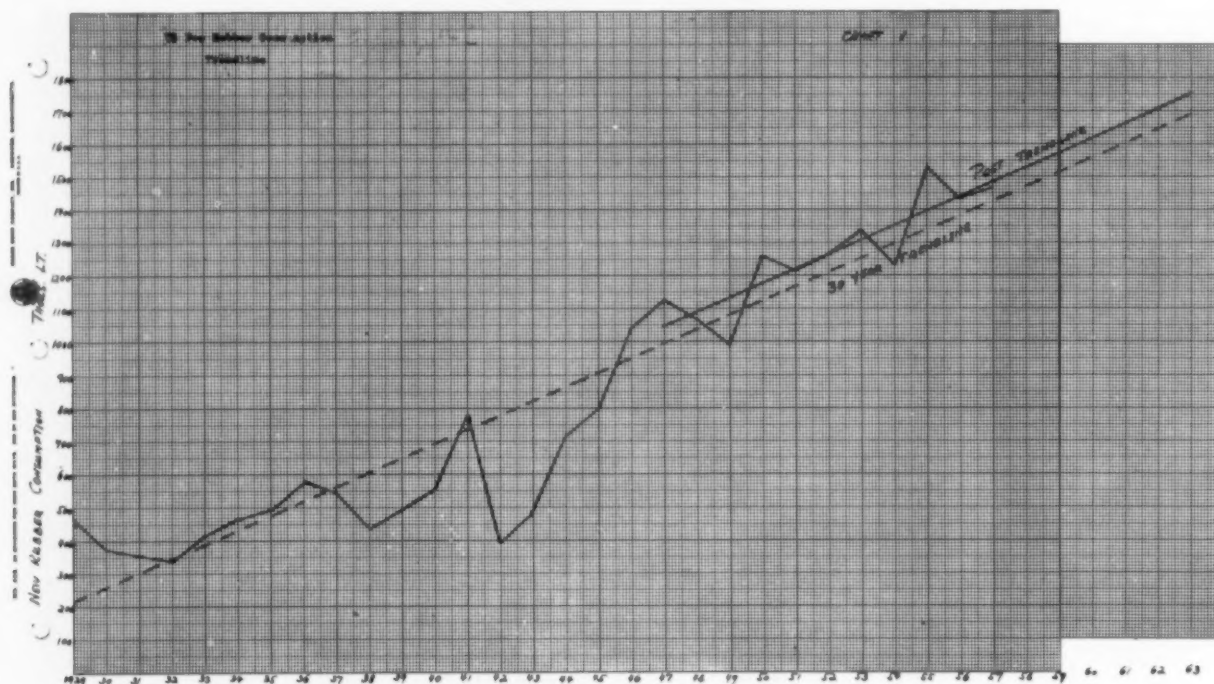
COMPUTATION OF POSTWAR TRENDLINE FOR RUBBER CONSUMPTION

Year	Y New Rubber Consumption	X Time Deviation Each year from Middle Year	XY	x^2
1947	1123	−5	−5615	25
1948	1069	−4	−4276	16
1949	989	−3	−2967	9
1950	1258	−2	−2516	4
1951	1213	−1	−1213	1
1952	1261	0	0	0
1953	1338	1	1338	1
1954	1233	2	2466	4
1955	1530	3	4590	9
1956	1436	4	5744	16
1957	1465	5	7325	25
	13915		4876	110

$$b = \frac{\sum XY}{\sum X^2} = \frac{4876}{110} = 44.3$$

$$a = \frac{\sum Y}{n} = \frac{13915}{11} = 1265$$

$$Y\ 1963 = 1265 + 44.3 \times 11 = 1,752 = \underline{1,752,000\ \ LT}$$

The resulting figures for new rubber consumption in 1963 are 1,690,000 LT on the basis of the long range trend and 1,750,000 LT on the basis of the post-war trend; the difference between the two values is only 3.6%. If the growth rate has remained almost steady over such a long period we can assume that it will continue this way unless economic and technological premises change.

There are a few factors which would indicate a sharper rise in rubber consumption, like an increase in the number of families who own two cars and stepped up consumption of rubber for industrial purposes, e.g. conveyor belts. However, a further investigation reveals that in some end usages rubber is being displaced by various plastics like polyurethane, and silicone.

In view of these offsetting factors it seems reasonable to assume that there will be no significant deviation from the past growth pattern and we can estimate that new rubber consumption in 1963 will amount to about 1,750,000 LT in accordance with the post-war trendline.

CYCLICAL FLUCTUATIONS

But we have to take into consideration that the growth does not take place in the form of a straight line as there are the ups and downs of the cyclical fluctuations. Therefore, the question comes up how large a deviation we can expect from the computed trendline value of 1,750,000 LT for 1963. This question is answered by computing the standard deviation which in this case amounts to + 6.3%. This means that new rubber consumption in 1963 can be expected to be between 1,640,000 LT and 1,860,000 LT.

It is more realistic to indicate a range than to give a definite figure, because we do not know at what point of a business cycle we shall be 5 years from now.

The next step is to establish the correlation between rubber consumption and usage of rubber chemicals in the U.S. We have to take into consideration that synthetic rubber requires about 1.5 times as much Rubber Chems. as natural rubber. Therefore, we must try to project the share of natural and synthetic rubber in 1963. There has been a definite shift towards synthetic rubber as the following tabulation indicates:

Year	Natural Rubber	Synthetic Rubber
1947	50.1%	49.9%
1948	58.7	41.3
1949	58.1	41.9
1950	57.2	42.8
1951	37.4	62.6
1952	36.0	64.0
1953	41.3	58.7
1954	48.3	51.7
1955	41.5	58.7
1956	39.1	60.9
1957	36.8	63.2

As this trend is likely to continue we can assume that the ratio of synthetic to natural rubber will be about 70 to 30 in 1963.

In the following tabulation we are showing consumption of natural rubber in col. 1 and of synthetic rubber in col. 2. In col. 3 we have adjusted the synthetic rubber consumption by the above mentioned factor of 1.5 and in col. 4 natural rubber consumption and adjusted synthetic rubber are added up. In col. 5 US sales of Rubber Chems "A" are indicated and the last column shows the ratio of US sales of Rubber Chems. "A" to the Adjusted Basis as in col. 4.

TABULATION

Year	1 Natural Rubber Cons. Thous. LT	2 Synth. Rubber Cons. Thous. LT	3 Synth. Rubber Cons. Adjust.	4 Total Adjust. Basis	5 US Sales of Rub. Chems "A" in Mill. lbs	6 Ratio Col. 5 to Col. 4
1954	596	637	956	1552	33,743 (Adj.)	21.7
1955	632	891	1337	1969	46,756	23.7
1956	563	876	1314	1877	10,748	21.7
1957	539	926	1389	1928	41,034	21.3
Estimated						
1963	525	1225	1838	2363	52,200	22.1

Source for US Rubber Consumption: Survey of Current Business

Source for Rubber Chemicals Sales: US Tariff Commission Report

We can see that in the years 1954 through 1957 the ratio has remained pretty steady with an average of 22.1. In 1955 the ratio was somewhat higher; This is due to the fact that in a beginning boom there is a tendency on the part of dealers and consumers to increase their inventories while in a recession the opposite takes place. Therefore, it seems appropriate to use the average ratio for a number of years which constitute a full business cycle.

We have now progressed so far in our analysis that we can project the US sales of Rubber Chemicals "A" into 1963. We have computed the expected total new Rubber consumption for 1963 at 1,750,000 LT and we have seen that the anticipated ratio of synthetic to natural rubber is about 70 to 30. Therefore, we can calculate the adjusted basis of rubber consumption as follows:

525,000 LT of natural rubber plus 1,225,000 LT of synthetic rubber, the latter adjusted by a factor of 1.5 due to the higher requirements of rubber chemicals, result in a total adjusted basis of 2,363,000. As there are no indications of a technological change whereby the ratio of Rubber consumption will change we can extend the Adjusted Basis of 2,363,000 by the above mentioned ratio of 22.1, resulting in a projection of 52,200,000 lbs. for US sales of this group of Rubber Chemicals in 1963. Here the standard deviation applies again, resulting in a range of 49.2 mill. to 55.5 mill lbs.

SHARE OF THE MARKET

We are now ready for the last two steps, determination of the market share of our Company and distribution of the total sales of the Product Group between the various types of these chemicals. For obvious reasons we can not go into any detail and show any figures but we can indicate the general procedure.

We have to calculate the ratio of Company sales to US sales of these Chemicals for a number of years. This will tell us if our market share is pretty constant or if there is any significant up or down trend. We have to discuss with our technical and sales personnel the reasons for such trends and in particular we have to try to evaulate how future events will influence our market share. Does our Sales Dept. plan a special advertising campaign in a certain area, or can we expect considerable improvements in the quality of some of our main products? However, our future market share is influenced not only by our own actions but also by the activity of our competitors. If our competitors, are able to market new products which are more effective or substantially less expensive, then our market share may be impaired considerably. This is of course the most difficult part of the long range forecasting procedure as we usually do not know the plans of our competitors. However, sometimes we may be able to get a clue by studying the new patents of our competitors. For it usually takes several years for a product to move from the laboratory or draft board into commercial production.

STUDY NO. 2

The preceding case study was relatively simple because there was only one important end consumer, i.e. the rubber industry. However, in most instances the usage of a product will depend on several end consuming industries. E.G. the end consumer analysis will show us that dyestuff group A is used 80% in the textile industry and 20% in the paper industry while dyestuff group B is sold predominantly to the paper industry. This is of importance for the future potential of these two product groups as the following chart (2) illustrates. The solid line represents the textile industry, indicating a slow growth while the broken line, representing the paper industry, reveals a fast increase.

While the line for the textile industry indicates a slow growth of approximately 1 − 2% p.a. like the US population, the paper and board production shows a close, correlation with Disposable Income, expressed in stable dollars. If we plot disposable income on the abscissa and paper and board production on the ordinate we arrive at scatter chart (No. 3). As a straight line seems to provide the best fit we apply the equation for a straight line mathematically. This method is demonstrated in the following tabulation: (See Page 16.)

In col. 2 we see the disposable income, which means income after tax. In order to exclude the distortion due to inflation, it is expressed in stable dollars by dividing the actual amounts by the cost of living index as published by the Dept. of Labor. The average for the years 1947/49 is assumed as 100.

The third col indicates the monthly average of Paper and Board production in thousands of short tons.

If we substitute in the equation for the regression line, which we have determined mathematically by the least square method (see p. 16), the projected value of Disposable Income for 1963 (assumed at 315 bill. $ in 1947/49 dollars) we arrive at a paper and board production of 41,400,000 short tons. As our above calculations indicate that the standard error of estimate amounts to only 3.1% we can expect that paper and board production in 1963 will be probably between 40,100,000 and 42,7000,000 short tons.

As the average annual increase which results for board and paper production amounts to about 4.6% against an average annual increase of 1.7% for textile fiber consumption it can readily be

Chart 2

Solid Line Represents US Textile Fiber Consumption (mill.lbs)

Broken Line Represents US Paper and Board Production (Thous.short tons)

1929 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58

Correlation Analysis

US Paper and Board Production

vs. Disposable Income in Stable Dollars

Chart 3

Average Monthly Paper and Board Prod.in Thous.Sort Tons.

Regression Line

3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700

170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320

Disposable Income in Bill.Stable $ (1947/49 = 100)

Year	x Dispos. Inc. in Stable $: 1947/49−100 Bill $'s	y Paper & Board Prod. Monthly Av. in Thous. Tons	xy	x^2	Regression Line Value	Deviation
1947	177	1760	31152	31329	1710	+ 50
1948	183	1825	33489	33489	1790	+ 35
1949	185	1693	31265	34225	1810	−117
1950	200	2031	40600	40000	2000	+ 31
1951	204	2171	44268	41616	2050	+121
1952	209	2035	42636	43681	2110	− 75
1953	219	2217	48618	47961	2240	− 23
1954	222	2240	49728	49284	2280	− 40
1955	236	2512	59236	55696	2450	+ 62
1956	247	2611	64467	61009	2590	+ 21
1957	250	2558	64000	62500	2630	− 72
	2332	23653	509459	500790		

$$b = \frac{n\ (\Sigma xy)\ -\ \Sigma x\ \Sigma y}{n\Sigma x^2\ -\ (\Sigma x\ )^2} \qquad = \qquad \frac{11 \times 509459\ -\ 5515180}{11 \times 500790\ -\ 5438224}$$

$$= \frac{5604049\ -\ 5515180}{5508690\ -\ 5438224} \qquad = \qquad \frac{88869}{70466} \qquad = 1.26$$

$$a = \frac{\Sigma y\ -\ a\ \Sigma x}{n} \qquad = \qquad \frac{2365 - 1.26 \times 2332}{11} \qquad = \ - 52$$

y 1963 = 315 x 1.26 − 52 = 345 therefore 3,450,000 t monthly Av.
= 41,400,000 t per annum

CALCULATION OF STANDARD ERROR OF ESTIMATE:

Year	Deviation $y - y_1$	$(y - y_1)^2$
1947	+50	2500
1948	+35	1225
1949	−117	13689
1950	+ 31	961
1951	+121	14641
1952	− 75	5625
1953	− 23	529
1954	− 40	1600
1955	+ 62	3844
1956	+ 21	441
1957	− 72	5184
		50239

$$\text{Stand. Error of Est.} = \sqrt{\frac{\Sigma (y\ -\ y_1)^2}{n}} =$$

$$= \sqrt{\frac{50239}{11}} = \sqrt{4567} \ \doteq \ 68 \text{ or } \underline{3.1\%}$$

seen that it is important to evaluate individually the impact of the growth of the various end consuming industries on our product lines. Very often we shall find that it is more meaningful to use only a certain section of an industry for our correlation, e.g. wool, cotton, or various groups of synthetic fibers instead of the total textile fiber consumption, and fine or coarse paper or building board instead of total paper and board production.

Finally, there will be cases where high transportation costs will not permit us to sell our product beyond a certain radius. Then we have to use data for the related Federal Reserve District rather than total US figures If these data are not available in the official statistics, Trade Associations can be sometimes helpful in providing such information.

However, it is imperative to study thoroughly what these figures contain and to evaluate care-

fully how closely related they are to our type of business.

EFFECT OF NEW PRODUCTS

So far we have been concerned with the growth potential of existing products on the basis of economic trends and technological changes. However, we also have to consider new products, which are in their growth stage. In these cases general economic factors are overshadowed by the special growth factor inherent in new products. The upswing usually takes place in the form of a curve as by the broken line shown on the following chart.

The solid line indicates actual sales. Judging by the performance of similar products in the past we can often make an educated guess of the duration of this growth period. Then we can estimate sales for the next few years by extrapolating the growth curve as illustrated on chart 4.

Chart 4
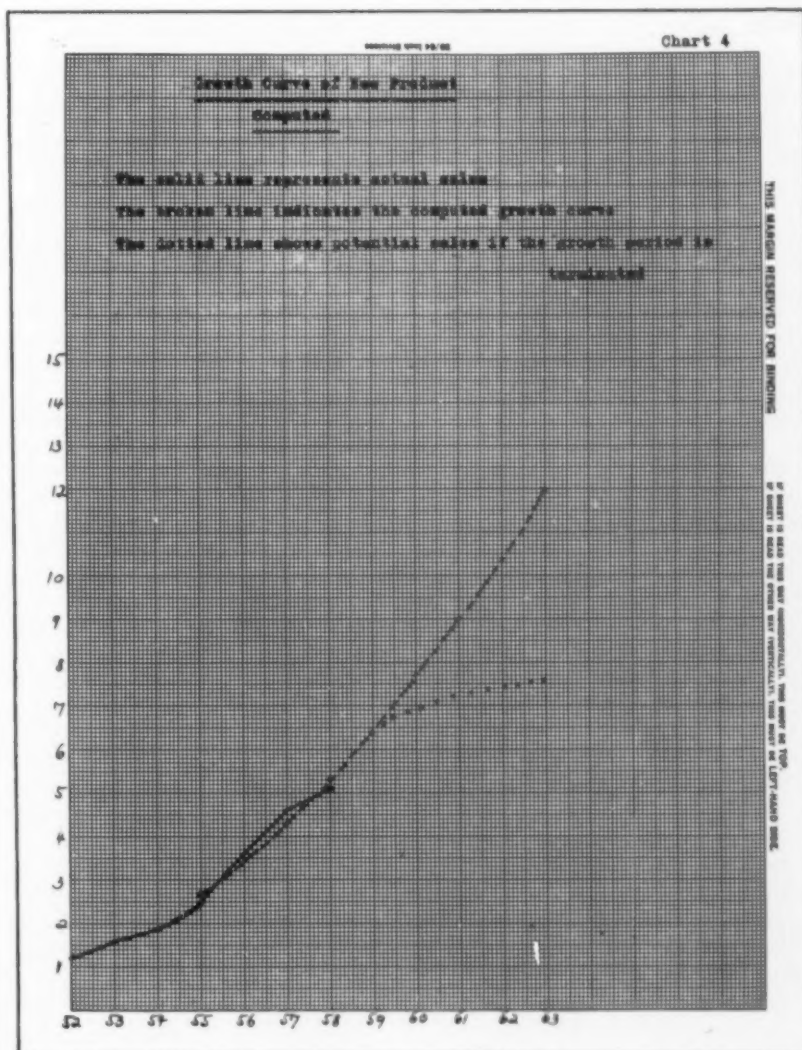
However, we have to bear in mind that one day the market penetration will have reached a saturation point from where the product will grow only at about the same ratio as the end consuming industries. In other words the growth curve will flatten out as indicated by the dotted line on the chart above.

Therefore in this case, the econometric method should always be supplemented by a market research survey which will help us to estimate when the turning point is reached.

After we have estimated the sales volume to be expected for our finished products we have to establish our requirements in intermediates. As an intermediate may be sold as such and may be used captively for different end products, e.g. Aniline for rubber chemicals and dyes, we have to add up all these requirements.

EVALUATE CAPACITY

Now let us assume that we have worked out a projection for sales and captive usage for all our important products for a five year period. The next step will be to check if our present production capacity is sufficient or if it has to be enlarged. If the latter is the case, the question arises to what extent we can increase our production capacity without running undue risks. The following example may illustrate this point:

Let us assume we have found that estimated sales of a certain product in the years 1961, 1962 & 63 amount to $8 million, $9 million & $10 million respectively. The standard deviation amounts to 10% with individual deviations up to 20%. The values resulting from this situation are shown in the following tabulation:

in mill. $	Extreme Low	minus Stand. Div.	Normal Exp. Sales	plus Stand. Dev.	Extreme Peak
1961	6.4	7.2	8.0	8.8	9.6
1962	7.2	8.1	9.0	9.9	10.8
1963	8.0	9.0	10.0	11.0	12.0

In order to take advantage of the highest potential sales volume of $12 million we would have to build a plant for which depreciation and other fixed charges would amount to about $5 mill. As our variable costs are expected to amount to approx. 35% of the sales value, a break-even point of $7,700,000 results. This means that in the year 1961 there is a probability of a loss if we are at the bottom of a business cycle and even in 1962 there is a slight possibility of a loss if there is a particularly poor year.

On the other hand, if we build a plant with a production capacity for sales of $10 million, fixed costs would amount to only about $4,000,000, which results in a break-even point of $6,300,000. In this case we would be on the safe side even under the most unfavorable conditions, however, we would not be able to take full advantage of a potential peak demand in 1962 and 1963.

It will be also of great importance to study advantages and disvantages of certain plant locations, tie-in with existing production facilities, availability of raw-materials and labor, and possibilities of diversification, acquisitions and mergers, furthermore, development of management personnel will be of considerable significance. But these questions are of a detailed nature and therefore beyond the scope of this paper.

NON-OPERATING EXPENSES

Perhaps it might be of interest still to add a few words concerning expenses below the gross profit line.

In order to estimate commercial expense we have to study if we expect the main growth from increased sales to the same customers or by expanding into new fields. While in the first case only a nominal rise in commercial expense will result, in the latter case considerable additions to our sales personnel will be required. The estimate of administrative expense will usually not present any particular difficulties but a word concerning research expense may be indicated. Naturally, we shall try to concentrate on those areas where our economic studies have indicated the highest growth potential. But in research, manpower is one of the most important factors, and is very difficult to evaluate. However, also in this case past performance may give us at least some indications where the main strength of our company lies. We can compare capital expenditures and profits from new products in the various departments with research expense, whereby, of course, we have to take the time lag into consideration between the research effort and the commercialization of the new products and our comparisons will become more meaningful if we compare longer periods. We want to illustrate this point by an example:

		Dept. A	Dept. B
Research & Development exp.	1948-52	$1,000,000	$1,000,000
Capital Expenditures	1951-55	3,000,000	6,000,000
Profit on New Products	1953-57	2,000,000	5,000,000

As it is evident that the research in Dept. B has resulted in more new projects and the profit on new products is considerably higher, it will be advisable to concentrate our research efforts in the future more on Dept. B than on Dept. A, unless we have a good reason to believe that the situation will change.

After we have brought our estimate down to the net profit line we can evaluate how much capital will be needed from outside sources by comparing net profit plus depreciation with planned capital expenditures. If it appears that we shall have to rely heavily on outside sources then it will be advisable to check our capital expenditure program very carefully. By applying the conventional methods of pay out period and return on investment as well as the cash flow discount method, which takes the time element into consideration, projects should be screened out where the expected return does not exceed the cost of capital by a safe margin.

Finally, I would like to point out that long range planning is not a one-time task, at least once a year our program should be reviewed and brought up-to-date.

SUMMARY

We can now summarize the steps to be taken to develop an effective long range program as follows:

1. End consumer analysis for our major products and product lines

2. Study of the growth factor of the main end-consuming industries, based on trendline and correlation analysis

3. Projection of the future growth potential of the end consuming industries, expressed as a range on the basis of the standard deviation

4. Projection of the total US market for our product lines, modified by anticipated technological changes.

5. Estimate of the future market share of our Company, taking past performance and expected competitive changes into consideration

6. Comparison of our future requirements with our existing production capacity and cost estimate for additional production capacity if required.

7. Recommendation of capital investments if justified by a satisfactory return on investment.

We must realize of course that we have certain limitations in spite of all our endeavours because we can not foresee all the future events which may have an impact on our business. But we can say, that a company which makes a determined effort to evaluate the facts of the past and probable future developments, will be definitely ahead of a competitor who neglects the important management function of long range planning.

By: Thomas S. Dudick
Management Consultant
Raytheon Company
Waltham, Massachusetts

ARE WE ON THE THRESHOLD
OF ANOTHER DEPRESSION?

THOMAS DUDICK, author of this article, is no alarmist. He is not crusading for all to wake-up and prepare for the gigantic depression which is just around the corner. He is crusading however, for planners (and that includes all budget men) not to blithely dismiss the possibility of its occurrence. It did happen and it could happen again! He explains the business predition parallels which exist today versus those in vogue in 1928-29; He discusses the depression proofing items in effect today; and, he presents his recommendations. Will this article stir a controversy? It should! We invite our readers to confirm or deny the allegations contained in this article.

FOREWORD

Since the end of World War II our economy has been the most prosperous in the history of the nation – so much so that many will not admit the possibility of a reversal. The 1957-58 recession, which interrupted this upward trend, was as sharp as it was unexpected; leaving in its wake 5,000,000 unemployed. In all liklihood, the launching of the Sputnik, which opened the door to the Space Age, gave the economy another boost at the right time.

The many analysts who did not foresee the 1957-58 recession might ask in humorous retrospect, "How dare these random forces upset my well calculated forecasts". The budget executive might in his turn ask, in more serious vein, "How dare I gamble my company's assets on economic forecasts which through habit are one-sided and reveal only the silver lining".

The present generation of managers has been nurtured in an ever-growing and ever-expanding economy which tends to hide inefficiencies and waste. In such an economy, today's excess inventories might well appear on tomorrow's "shortage sheet". Today's surplus personnel can become tomorrow's recruitment prospects if we merely bide our time. This is not true of an economy which is phasing downward. Herein lies the theme of this paper. The paragraphs which follow will portray the events which took place during the worst depression in the history of the country and will attempt to show the effects on business, so that comparisons can be made of the difference between a rising and a falling economy.

THE GREAT DEPRESSION

The stock market crash in October of 1929 marked the beginning of the sixth major depression in the United States since the Civil War.

In 1932, more than twelve million of the forty-eight million workers normally employed were out of work. Those who were employed had taken pay cut after pay cut until buying power had dropped to half the 1929 level. Five million of the unemployed were dependent upon charity – throwing an even further strain on those who had jobs.

Such were the cold statistics of the depression. But let us look a bit further and analyze some representative groups to see how they were ensnared by the overwhelming forces of the worst depression in the history of our nation.

Then, let us look more closely at some parallels in the present trends in our economy.

MANUFACTURING ACTIVITIES

Manufacturers who in 1928 saw no evidence of depression, but rather a continued rise in business, were rudely awakened when their plans, which had been predicated on a new economic era, came to grief.

Automobile parts manufacturers, for example, anticipating an annual automobile production of upwards of 5,000,000 cars per year (actually a new peak of 5,358,000 was reached in 1929), built new factories and installed more modern equipment at the highest prices in the history of the country.

In 1932, quite contrary to general expectations, the auto industry could sell only 1,371,000 cars—much less than normal replacement demand. With sales down, automobile parts manufacturers—like industry in general—found its fixed costs of expanded facilities a greater and greater drain on profits. This left but one set of alternatives—limited production in order to reduce inventories, reductions in force, and pay cuts. Steel, which depended upon the auto industry for much of its business was likewise affected, not only by curtailed auto production, but also by reduced building construction and reduced buying by railroads. Further down the line, mining operations were being curtailed at an increasing rate.

In 1955, as in the late Twenties, new peaks were attained in auto production. Again, as in 1928 and 1929, gay colors, streamlining, and generous credit terms were featured in order to increase sales. People bought new cars and second cars until the manufacturers in their dog-eat-dog race for a larger share of the market began to enlarge facilities, build new factories, and purchase more equipment. Auto parts manufacturers, steel, and mining operations were likewise expanded just as they were in the late Twenties.

THE HOTEL BUSINESS

Hotels, backed by evidence of an increasing population and forecasts of an unlimited growth potential due to the increasing demand for autos, airplane travel, radios, refrigerators, new homes, and the development of air conditioning, to mention only a few, also began their program of expansion.

The typical reasoning as evidenced by one hotel management in a medium-sized city was that even though additional facilities would cost $21,000 per room—admittedly the highest in hotel history—an average room occupancy of 300 nights per year at $5 per night would pay off the invest-

ment in less than 15 years. Then, there was the favorable prospect that room rents could be increased because of growing demand for rooms. Management's plan was to install radios in each room of the new wing and immediately increase the rental to $5.50 per room, and later possibly to $6.00. Thus, even the record-breaking investment of $21,000 per room could be recovered in as little as 13 years.

Although plans for expansion in this particular hotel looked sound, economic events did not work out as anticipated. Hotel rents, instead of increasing, dropped to $3.50 per night and occupancy dropped from 300 nights per year to 200. Instead of 13 to 15 years of investment recovery, it would now take almost 30. The large fixed charges still had to be met in 15 years or bankruptcy would follow. It became necessary to make drastic cuts in operating expenses which resulted in a one-third reduction of hotel personnel. While the hotel business and hotel expansion do not make up as substantial a portion of our economy as manufacturing, the story of hotel expansion demonstrates quite vividly how expansion can be justified and yet can be the undermining factor of many undertakings which are poorly timed. This was especially true in the case of home ownership which will be discussed next.

HOMEOWNERS

The typical salaried person in one large city who purchased a home at peak prices in 1928 and 1929 had much in common with an overexpanded business. This typical city dweller who earned $360 per month in 1929 bought a $12,000 home and paid $1500 to $2000 as a down payment. Three years later, pay cut after pay cut reduced his monthly earnings to $185. However, the $80 per month in mortgage and tax payments had to be met even though an equivalent house could be purchased for substantially less than the amount of the outstanding mortgage. Most homeowners who were still employed did not give up their homes even though they could rent for less than the monthly payments. To give up their home would mean that they would be subject to judgement on their auto, furniture and wages. The only alternative was to cut all expenditures to the bone.. This meant postponing purchase of furniture, rugs, radios, refrigerators, autos, clothing and other items which could be delayed by making the old item last longer. The effect of this mass reduction of demand was to force prices down even lower.

One need not look far to see the effect of optimism on recent home buyers. Even the purchase of a home involved committing one's self to a debt which requires a generation to repay, homes are being purchased at the highest prices in history. When wages, which have been climbing higher and higher since the beginning of the present boom, begin to drop, as they have begun to do in some areas, people who have committed them-

selves to larger payments and more house than they can afford, will begin to feel the strain. Should a downward trend develop, families will double up again as they did in the Thirties and home construction will grind to a standstill.

UNION WAGES IN THE CONSTRUCTION INDUSTRY

Official wage cuts in the construction industry were greatly outnumbered by unofficial cuts which were achieved in various ways. A common method was to employ non-union labor in organized cities at below-scale wages. Frequently these workers had but recently been dropped from the union through inability to pay dues because of idleness, and union leaders were not inclined to take action against them. In other cases union men, long idle and nearly broke, accepted work at the regular scale but also on the understanding that various deductions would be made from their pay envelopes or that they would return certain percentages of pay for various reasons. Most of these methods of wage-cutting were known to union officials but, with nearly 50% of building tradesmen unemployed, there was not much they could do about it.

THE RETAILER

In October 1931, furniture prices were less than half the 1929 peak. While reductions in the general price level might have been looked upon as a boon to the average wage-earner working for considerably less pay in 1932 than he did in 1928 and 1929, actually it was the steady downward drift of prices which had made the depression so serious.

This was demonstrated effectively in the case of the owner of a department store who plowed back his earnings into the business year after year in order to build up a sufficient inventory to carry a wide variety of goods similar to that carried by his competitors. In an 18 month period during the depression, the fall of prices had reduced a $100,000 inventory of one retailer to less than $80,000. This loss was equivalent to the amount of money which the owner would normally take out of the business in wages for four years. As prices dropped and the value of inventories and sales decreased, more and more retailers were forced out of business. This flooded the market with unsold merchandise which was offered at almost any price in order to salvage cash. The obvious result was an even further decline in prices and more failures.

The retailer who deals with the public firsthand, is probably the first to notice the effect of a depression on the buying habits of his customers. He notes that the homeowner who begins to worry about meeting the payments on his home is no longer interested in buying a new car, a new range, washer, drier, refrigerator, or vacuum cleaner...his only concern being to keep his head above water.

In our present economy, durable goods, such as the aforementioned, account for employment of a larger percentage of our population than was the case in previous periods of history. As was evidenced during World War II, purchases of these durables could easily be postponed for as long as four to five years. Imagine the impact on our economy if reduced demand caused curtailment of production of durable goods to a point well below normal replacement demand as was the case with autos in 1932! The resulting paralysis could be worse than in the thirties when so many of our present durables were in their infancy stages of growth and did not account for as large a portion of the national income.

THE BANKING CRISIS

Banks, in order to meet demands for money by their depositors, had to sell securities at prices substantially below the original price paid for them. Pittsburgh, in the fall of 1931, was enjoying reasonably good business when, without warning, ten banks closed their doors. There was a hesitation and then a reassuring upward movement. But in the latter part of October five more banks closed—among which were two long established, supposedly solid institutions. This set off a sales slump which did not stop until there was a one-third reduction in volume of business in the area.

As the depression deepened, the growing difficulties of American business led to cross-fires of accusation between business men and the banking group. Bankers criticized businessmen for over-spending and over-expanding in 1928 and 1929. The business group in turn asked who financed the instalment purchases which were being defaulted and who accustomed John Q. Citizen to a high standard of living which he now hears condemned. The businessman wondered who financed and encouraged him confidently to build plants and to increase output—and why this credit supply was no longer available.

EVEN THE TOP EXPERTS WENT WRONG

The inability of manufacturing managements, hotels, and retailers to forecast the sudden downturn in business which resulted in the depression was not limited to this group or to the average person who had little or no training in business or economics.

Even top experts made bad guesses as was illustrated by National City Bank Stock. This stock had a book value of between $60 and $70 and paid annual dividends of $4 per share. In spite of these well-known figures, this stock sold as high as $580 per share. Surprisingly, the officers of the bank, who were looked upon as experts in bank stock evaluation, borrowed heavily to buy at these prices. In the spring of 1933 the same stock sold for $28 per share.

Andrew Mellon, secretary of the Treasury for

President Coolidge, made a report in late 1928 in which he stated that on the whole, the country is prosperous and that he did not see any indication of a depression or slump in business.

Irving T. Bush, President of Bush Terminal Company, made the following statement on November 15, 1928: "We are only at the beginning of a period that will go down in history as the Golden Age".

Charles H. Schwab, on December 10, 1929, said: "Never before has American business been as firmly intrenched for prosperity as it is today".

Arthur Brisbane in his syndicated column, "Today" wrote on October 30, 1929: "Those that foolishly talk about a national panic, will please remember that the income of this nation is one hundred billion dollars a year".

The Guarantee Trust Co. Survey on December 30, 1929 said: "Recently developments have fortified the optimism with which businessmen regard the prospects for 1930".

As in 1928 and 1929, prominent businessmen, captains of industry, and government officials are once again forecasting the marvels to be achieved by 1965, with little thought to the possibility of an intervening depression which could postpone predictions for 1965 to as late as 1975 or even 1980, just as the "Golden Age" predicted for the thirties was postponed to the present boom which began nearly twenty years late!

THE BUSINESS CYCLE

No discussion of depression would be complete without a brief review of the business cycle. The depression is only one phase of that cycle. A good point of reference might be the recovery from the preceding depression which in its later stages becomes the beginning of the next boom. As the recovery stage ends and the boom gathers momentum, business approaches capacity. Profits increase because additional sales volume is obtained with a minimum of additional cost. As profits become larger, more competitors enter the field and competition becomes keener. Existing facilities become strained in the attempt of each producer to obtain a larger share of the market. As a result, additional facilities are built and new more modern equipment is installed. With the increased expansion, the boom swings into high gear, labor becomes more scarce and wages rise higher and higher—driving prices upward. Along with increased sales go increased inventories which also are accumulated at increasingly higher costs.

At a certain point in every boom, governmental notwithstanding, demand begins to slow down. This point is reached as soon as the consumer realizes that he has overextended his credit—in other words, he realizes that he has purchased too many of the goods which he normally would not have bought until a year or two later. Demand

falls off while the consumer "catches up". If the "catching up" period is prolonged, possibly due to increase of pessimism and loss of confidence in the future, inventories and fixed costs suddenly loom large because the sales they were intended to support have evaporated.

Prices are reduced in order to dispose of excess inventories. As prices are reduced, marginal producers are forced out of business; their inventories and facilities becoming a glut on the market, driving prices still lower. As business cuts back and earnings decline, consumers who have overextended themselves begin to liquidate. In short, they sell houses which are now too expensive to carry; they return automobiles and appliances on which they can no longer make instalment payments and they begin to hoard money instead of spending it. All this results in a further depressing effect on the economy as liquidation becomes uncontrolled and the forces of depression reign supreme.

THE PRESENT BOOM

After World War II and the Korean War, the public debt rose to the highest point in the history of our nation. Since 1949, consumer credit has doubled; personal mortgage debt has increased 126%. As in 1928 and 1929, recent periods saw the production of the greatest number of automobiles, houses, and appliances ever assembled—all purchased at prices which were the highest in history—and purchased with the greatest amount credit ever floated. In early 1956, although demand for autos, houses, and appliances had begun to slow down, indicating that facilities were close to the requirements for meeting demand, American Industry still planned and went ahead with a $35 billion expansion; which meant that capacity would be expanded to produce even more autos, refrigerators, washers, television sets, and other consumer goods than were produced in the peak year of 1955.

ROSE-COLORED GLASSES NOT A SUBSTITUTE FOR ECONOMIC LAWS

In every period of prosperity, there are those who decry the possibility of another serious depression. During periods of optimism and the accompanying prosperity, human nature rejects any suggestion that business might become bad.

The argument is frequently advanced that Unemployment Insurance, Termination payments, enlarged private Pension Plans, and Social Security will act as deterrents to a depression. One might well ask what effect one year's payment of unemployment insurance in 1930 would have had in reducing the severity of a ten year depression, which might have lasted even longer had it not been for the outbreak of the world conflict. One might also match the increased pension plans and social security benefits with the great increase of the over sixty-five population. Since the social

security payments must be paid out of current payroll deductions which are to increase to three times the present rate in order to keep pace with the increase of the eligibles, what would be the result if the source of funding were decreased by mass unemployment?

The Social Security Administration reports that 25 per cent of all married couples over 65 have no liquid assets. 40 per cent of all widows over 65 and 44 per cent of all single retired persons are in this situation. Less than 40 per cent of these people have as much as $3,000 of liquid assets or ready cash. Although we consider ourselves the richest land in the world, 83 per cent of all married couples over 65 have less than $10,000 in liquid funds, 88 per cent of the aged widows and close to 93 per cent of single retired persons could never raise this amount of money out of a bank account or through sale of stocks or bonds!

Concurrently with the increase of the over 65 segment of our population, the younger members who will be below working age during the coming decade are also increasing. This means that a greater portion of the population must be supported by a decreasing percentage!

The "Gay Nineties" with their visions of tremendous strides to be brought about by the introduction of electricity and further development of the country's unlimited resources were rudely interrupted by a major depression.

The "Roaring Twenties" with their visions of a new economic era brought about by mass production and mechanization which would bring luxuries within the reach of all were rudely interrupted by a worst depression in the history of the country.

Now, after the "Fabulous Fifties" with their glowing predictions of the atomic age, and the age of space travel, are we once again on the threshold of the inevitable—inevitable because of strains in the economy which always accompany a period of expansion? The greater the expansion the greater the strain, and, therefore, the greater the adjustment which must follow.

The following prediction was contained in an a 1932 issue of "Business Week": "The chances are that the world that will rise out of the waters of the long liquidation will be much the same old cockeyed world, operating in the same old spirit of keen, throat-cutting competition, only more so. So far as we can see, nothing in the basic pattern of business life and conduct in this country has been altered by the depression; but everything in it will probably be greatly itensified in the period that lies ahead. Its instability will be more marked; the next boom bigger when it comes, and the next depression deeper, as indeed seems to have been true of each succeeding cycle in our history".

SUMMARY

The pages of history are replete with accounts of the recurrent swings of the economic cycle from the heights of optimism to the depths of despair. Even before the advent of the industrial revolution and its accentuation of the business cycle, man's well-being has alternated from periods of prosperity to devastating periods of famine, war, and pestilence.

If man's economic well-being has alternated from one extreme to the other since the beginning of recorded time, can we logically accept the proposition that from this point on our economy will never again relapse into a period of deep depression? Can we accept blissfully, the lulling effect of those soothsayers who propose that Unemployment Insurance, Termination payments, Pensions, and Social Security will forever eliminate the possibility of another depression?

Herein lies the clue as to whether modern business should make its plans based on one set of circumstances, or whether forecasts should be made at two levels of business activity, so that management's decisions may be tempered by a recognition of the range of possibilities based on both an optimistic and a pessimistic look at the coming years.

NON-INDUSTRIAL COST CONTROL

BY

Wesley T. Head
Deputy Budget Officer
Ordnance Ammunition Command
U. S. Army
Joliet, Illinois

Charles W. Cullen
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Kankakee, Illinois

Charles L. Henderson
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Vast amounts of dollar expenditures do not flow through manufacturing concerns, however, there seems to be an inordinate amount of coverage given to the solutions of the manufacturing problems of cost control, while non-industrial cost control receives limited attention. The Joliet-Kankakee chapter decided to explore the non-industrial cost control subject in a panel discussion. The panel participants (all chapter members) offered a synopsis of their talks for publication, and we believe our members will welcome coverage of this subject. A review of the joint authorship reveals a diversified group of "Industries;" all having a kinship to the cost problems of a non-industrial nature.

NON-INDUSTRIAL COST CONTROL – UNIVERSAL PROBLEMS

by

Wesley T. Head, Deputy Budget Officer
Ordnance Ammunition Command, U.S. Army
Joliet, Illinois

Although the control of costs has become one of the most belabored themes of current times, control of costs is about to become the key to success for those individuals who attain recognition and renown in the field of scientific application of modern management techniques.

Business failures are often blamed on the lack of adequate control of those industrial costs which are intended to contribute to the generation of a profit. In many instances, the blame rests with the burden of nonmanufacturing or nonindustrial costs caused by poor planning on the part of the management of the industrial enterprise itself.

This article will discuss the control of non-industrial costs in any organization, be it manufacturing or service, public or private. The context of control, as used in this presentation, is "to check, regulate and keep within desired limits".

To design an effective control system, we must isolate and identify just what elements we are trying to control. They must be assigned account numbers and then accurate records must be maintained. Here are some of the main elements which we must really understand, and over which an adequate control will return the most desirable results. This is not intended to be a complete list, but is reasonably representative.

  a. Top management

  b. Administrative services

  c. Management services

  d. Personnel management

  e. Financial management

  f. Personnel training

  g. Research and development

  h. Capital investment and plant

  i. Support services

a. **Top Management.** This is a difficult one. In this area we find the President, Vice Presidents, and Board of Directors. The annual salaries and expense allowances of these individuals constitute an expense which does not lend itself to control by engineered cost control methods; therefore, they will not be treated in this cost control research.

b. **Administrative Services.** These services, both in number and cost, are many and varied. The secretarial staff -- how many "private secretaries"? How many typists? How many receptionists? First, how many are really needed? Do they give a full days useful work for a full

days pay? How many are "just trimming" and, in that capacity, a "cost" which could be reduced or eliminated? How many of these employees are really efficient, willing and have a desire to contribute to the benefit of their employer?

c. **Management Services.** This element can generate an unnecessarily huge cost, or it can be "worth its weight in gold." The best of intentions by the President, Vice Presidents and some members of the Board of Directors who have management experience and ideas, often not too modern, sometimes result in misdirected effort and money spent for pet experimental systems or procedures. One of the most prevalent causes of unnecessary expense in this area is too much detail or duplication of detail in "special reports", etc. A good professional manager who has his future at stake is more interested in finding and eliminating unnecessary costs and reducing the cost of some management elements which cannot be eliminated. Therefore, he is more aggressive in taking measures to eliminate excess costs.

d. **Personnel Management.** Here, again, is an area where professional training can bring about efficient personnel management and adequate staffing with qualified personnel.

e. **Financial Management.** This is one of the areas in which great strides are being made. The erroneous idea, which in many instances has contributed to failure to effectively reduce costs, has been an unduly heavy reliance on the skills of accounting experts. These people are highly skilled in determining the accuracy of accounting, but by the very nature of their training they are often remiss in their efforts and are not qualified to explore the causes of these "costs" which they so accurately record.

f. **Personnel Training.** This area can be a difficult one. Training, for the sake of training, generates unnecessarily high expense. Properly used to further increase the potential and ability of otherwise highly qualified personnel, it is not costly in the end. The return is great; although the "cost" in dollars may be apparently high, because it does not lend itself to the usual "cost" per unit type of analysis. Skilled personnel management and administrative ability are required to control this one.

g. **Research and Development** is a very difficult area in which to exercise control. This field of endeavor can "lose" many dollars on impractical research, or it can generate many dollars in potential profit. Control of the items or field of research is the major governing influence here. Positive goals rather than aimless "research" is desirable. High level mental research to visualize a product or item which is needed, or is highly desirable and, therefore, will be a good "production item", is a most important first step in research.

h. **Capital Equipment and Plant** investment is an area which causes premature failure of many enterprises before they get off the ground. Efficient equipment designed for the job is a "must".

i. **Support Services.** This is an especially unpredictable "robber" if not given the attention it must have. What are support services? This item of cost is too often passed over lightly. It can be a hidden monster. We must have heat, light, communications, local transportation, janitor, or, shall we say, custodial services.

1. Efficient heating and cooling in the appropriate season are necessary. Overheating or overcooling are high expense items. They both can and do adversely affect production, which is our profit making effort.

2. Correct and adequate lighting is a must. The cost of modern lighting installations can often be saved in one year.

3. Communications — How many hours of telephone service and inter-office communication are being wasted? How many necessary calls are twice as long and costly as they should be?

4. That array of fine cars, each with a driver. This "trim" is not for free. How much of this transportation is eyewash and trimming? How much of it is "legitimate" and useful?

5. How much of the expense for custodial or janitor service is over and beyond that which will keep the office, warehouse, plant and grounds in a clean and safe condition? How much of the building and grounds upkeep, maintenance and repair are reasonably necessary, and how much is overhead on overhead?

This problem of nonindustrial cost control is not unknown to governmental organizations. The greatest effort toward cost control in our time is currently being made by the Federal Government, including the intensive effort within the Department of Defense.

I am sure you recall the Hoover Commission and the recommendations made by that committee and several sub-committees. The Department of the Army and the Army Ordnance Corps are sparing no effort to put into effect a management system designed to do just what we are interested in, controlling costs. This system is designed after the recommendations made by the best research engineers, experts, if you will, in this field of control within commerce, industry and education.

Specific answers to specific excessive costs are not intended here. The control of nonindustrial costs is indeed a big problem. As has been brought out in this presentation, first the elements which generate the nonindustrial costs must be examined. Then all of these elements, the obvious and the not so obvious must be singled out, identified and justified as being

necessary, not just desirable. The "necessary" must be examined further, so that they can and will be carried out with a minimum of cost. This cost control must not be so stringent that over control in one area generates excessive costs in another area.

SUMMARY

A quick summary -- Pinpoint every element of the nonindustrial operations, find out what it costs and why. Eliminate those elements not necessary and then "control the costs of those you are not able to eliminate." You can do nothing to control those things which you do not know about; or if you do know of them, you can take no effective control action unless you find out why they exist and to what degree they are necessary.

Let me offer this caution. Don't try to cut the President's salary. Don't try to take away the President's extra decorative secretary. Don't try to take away the President's extra Cadillac. Confine yourself to those costs which you can control.

NON-INDUSTRIAL COST CONTROL IN HOSPITALS

by

Charles W. Cullen, Assistant Superintendent
Kankakee State Hospital
Kankakee, Illinois

Budgeting takes on different meanings for different people and for different settings. In budgeting for industry, there is a definite relationship between income and expense. Both factors are variable in industrial budgeting. For the individual, however, personal budgeting is an effort to "live within his income"; in most cases the income being fixed in amount. To governmental units, budgeting is a form of forecasting expenditures, properly justified, and estimating revenue, if any, in order to secure the difference as an appropriation with which to operate. The main difference between governmental budgeting or personal budgeting, and industrial budgeting is that managers of the latter can not assume that an income will be governed by expenditures, nor that income will be fixed. In industry, both income and expense are variables.

In all budgeting there is an implied obligation to "plan future operations". Indeed, budgeting is an immeasurable aid to planning. The planning we refer to is not simply financial planning, but constitutes a well organized and integrated overall plan to meet the objectives of an organization.

Each department head in the hospital must know the total objectives and the role that his department will play in meeting them. The ex-

tent to which objectives are met can be used as a tool for evaluating the operations of a department. Hospital budgets assist hospital management when they are used as tools to (1) direct, (2) control, (3) coordinate, and (4) departmentalize the activities of the hospital.

1. DIRECTION

Direction refers to planning the entire operation to accomplish desired results. Emphasis must be placed on total operational plans and not simply financial consideration of income and expenditures. Hospitals have special problems in budgeting in that their entire income doesn't always result from charges for services. Other sources might include earnings on endowment funds, gifts from organizations, appropriations from governmental units, nurses' tuition fees, etc.

2. CONTROL AND EVALUATION

Control is a process of enforcing accountability and to thus accomplish the desired result. The mere fact that a budget is prepared in a hospital is a factor of control. Department heads who have participated in the preparation of the budget have to an extent become conscious of cost limitations. Control is facilitated if comparisons are made between actual performance and planned or budgeted operations.

Hospital budgets tend more and more toward being prepared not only in terms of dollars, but also in terms of projected activities units. This permits a more significant and understandable comparison as a means of evaluating operations. For example; it is more significant if the Food Manager can compare the actual number of meals prepared in a certain period per employee with the budgeted number of meals, than simply to compare two dollar amounts representing budgeted and actual expenses.

3. COORDINATION

Coordination means the proper arrangement of all factors so as to produce harmonious results. It is a form of leadership which makes the many and varied departments of a hospital "tick". While coordination can be obtained in an organization without a budget, it is easier to bring about the proper coordination necessary to unify the purpose and to obtain group concurrence in accepting the objectives to be achieved when a budget is used.

In hospital budgeting this is achieved when all department heads realize the role they play toward meeting the hospital's need for financial and operational planning.

4. DEPARTMENTALIZATION

Because budgeting is planning, and the use of budgeting compels one to think in terms of the total operational program, it is also a great aid to departmentalization within an organiza-

tion. By departmentalization, we mean the proper grouping of functions and personnel into units called departments. This accomplishment is essential particularly in hospitals where units are generally small but exercise distinct functions in the total operations pattern. The final result is the development of a realistic organization chart.

SPECIAL PROBLEMS

Hospitals tend to depart from many generally accepted principles of good accounting and budgeting. Fortunately, however, due mainly to the efforts of the American Hospital Association, hospitals are achieving a realization of the benefits to be derived from budgeting and proper financial management.

Presently it is probably only the larger hospitals that prepare and operate with comprehensive budgets. Smaller hospitals probably do partial budgeting to some extent. The difference in the two types of budgeting is that in a comprehensive budget all phases of the operations are budgeted by departments and/or functions. And all such budgets are integrated with results expressed in forecasted financial statements. In partial budgeting, hospitals may budget for such large segments of expense as cost of personnel or capital expenditures for equipment, or in some cases only for certain departments such as laundry, or food service.

Hospital administrators hope that as more hospitals experiment with partial budgets they will recognize the benefits achieved in budgeting and will extend the program to all areas and functions, thus eventually resulting in compilation of a comprehensive budget.

In hospitals where budgeting has been accepted, many departments have been encouraged to prepare flexible rather than fixed budgets. Flexible budgets are a series of individual budgets prepared for various levels of activities. Such budgets are more desirable for hospital use. This is so because it is very difficult to estimate with a high degree of accuracy the activities that will be performed by various departmental units in a hospital. A flexible budget also makes for easier comparison with actual results and thus is a better tool of control and evaluation. It is likewise more meaningful to the department head responsible for the activity.

Hospital authorities generally have accepted the theory that hospital budgets should be prepared on the basis of direct cost and not total cost. The difference being that direct cost includes only those items over which a department head can exercise control. Budgets on the basis of total cost have in addition to direct cost figures, an element of additional cost for overhead expenses of service departments. Only in the very largest hospitals and generally in government operated hospitals has the principle of

budgeting on total cost been recognized at all, and even then not always accepted or used.

Hospitals are better managed today than ever before in their history. Recognition is being given to the role that budgeting plays in the total management picture. This thinking will expand and grow since more progress can still be made in this area.

NON-INDUSTRIAL COST CONTROL
IN A COLLEGE

by

Charles L. Henderson, Business Manager
Olivet Nazarene College
Kankakee, Illinois

Costs we have with us always, but not always under control.

Institutional budgeting and industrial budgeting have many things in common, such as source of finance, products or services, management and the constant effort to show a balanced budget indicating progress if not profit. There are other areas in which the educational budget differs:

1. Income and expenditures are on a more fixed pattern showing less fluctuation.

2. The approval of the budget and its operation are the responsibilities of a separate group of individuals.

3. Fewer changes are made in educational budgets because of a more even demand and a more regular program.

First — Past experience and adjustments in charges can be used to approximately determine the income of a college in any given year. The office of admissions is closely watched for at least three months prior to the beginning of the fiscal period. If there should appear a downward trend as in 1954, immediately a budget adjustment is made to the degree indicated by the income fluctuation. Faculty with contracts are retained, and other general services in operation and maintenance must be maintained; therefore, any adjustments have to be made in services, maintenance, and improvements.

In view of the increased demand made of educational institutions and increases in student costs, must budget adjustments are upward. The above is my reason for believing that college and institutional income is more stable than that of industry.

Second — The approval of the budget is the responsibility of a Board of Control located in Washington, the state capitol, or the home city, or a board made up of individuals from many localities. The operating control of the budget is vested in the chief administrator of the institution who will delegate detailed responsibilities for the operation of the budget to sub-

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ordinate administrators, such as the Business Manager and Comptroller. But, he and he alone has the authority to make any adjustments in the budget after it is once approved, then only by written document properly signed.

Third – Fewer changes are made in educational budgets because of a more even demand and a more regular program. There has been a constant increase in the cost of education in the last nine years caused by enlarged program and new buildings. To illustrate: instruction cost has increased 78%, general institutional expense 55%, operation and maintenance only 24% and utilities 66%. Total income has increased proportionally in this same period.

Alwyn Hartogensis recently quoted "a budget is a plan of action for the future" and "control is to check or regulate; to keep within limits."

Cost control in a college rests largely in the business officer and his organization. His authority and budget must reach as far as his responsibility. He must have authority to control.

There are two prerequisites of "cost control". They are a complete, accurate and workable chart of accounts covering the same divisions, operations and detail contained in the budget under which he is working; and, a budget that covers the entire business program. Both the chart and budget will develop with the progress made in "cost control". A product of the above tools will be a report; the frequency to be determined by top management. With the information

provided, the business officer must have the authority to say no, if funds are not available for a request.

A little more about this monthly report. It will contain the following information: budget for the year, expended to date in dollars and per cent of annual budget, per cent expended at the same time last year, and balance of the unincumbered budget. If any department has shown much of a variation from the pattern, the department head is requested to explain and correct.

A check point for expenditures comes in the processing of a requisition which must be signed by the immediate superior, and, in the academic departments, by the Dean of the College, to give him a chance to see how his budget is being spent by subordinates. If a budget for one type of expenditure has been exceeded within a department and there are still funds in the department budget, a transfer can be made by written request, properly signed. If there are no funds in this department but there are unexpended funds in another, a transfer can be secured if agreeable to all parties involved and top management.

With the use of a budget, requisitions, work orders, purchase orders, and monthly reports, costs are pretty well controlled in an educational institution.

The whole operation is woven together into a pattern to spell success, but if anyone drops a stitch the pattern is spoiled.

New NSBB Chapters –

    No. 40 – Shreveport

    No. 41 – Baltimore

    No. 42 – New Orleans

    No. 43 – Utah

    No. 44 – Nashville

When these Chapters are officially presented their charters, we hope they will have a cameraman handy so that we can record the proceedings.

WALTER P. WEBER, the President of the Skokie Valley Chapter of NSBB has been named Assistant to the Controller for Bell & Howell. Walt joined Bell & Howell as an Industrial Engineer in 1951 and was appointed Budget Manager in 1954. Congratulations!

Calumet Region Chapter reports that ARLO PETERSON has been promoted from Works Auditor to Staff Asst. to the General Supt. at Wisconsin Steel, and that EARL CUNION has been elected a member of the Illinois Society of Certified Public Accountants.

From Northern New Jersey Chapter comes word that

LOUIS G. LIBUTTI, of Wheelock Signal, Inc. has been elected Treasurer of that firm.

BREMER EHRLER of the Louisville Chapter has been promoted from Chief Accountant to Superintendent of Mails at the Louisville Post Office.

JOHN BRAXTON of Bemis Bag Co. of St. Louis was recently appointed Assistant Secretary of the firm.

Just preceding our NSBB National Conference, the AMA held an Orientation Seminar in San Francisco on the subject Profit Planning with Budgetary Control''. Serving as Chairman was Member-at-Large, HAROLD L. COLTMAN, Manager, Management Advisory Service, Haskins & Sells of Portland.

One of the Speakers was FRED A. TEGELER, Budget Control Officer, Western Pacific Railroad and a member of the San Francisco Chapter.

FRANK MCARTHUR has left St. Louis for Chicago. He is now associated with the Brunswick Corporation as Staff Assistant to the Controller. Frank has been a consistent contributor to BUSINESS BUDGETING and we wish him a great deal of success in his new position.

NEW CHARTER PRESENTATIONS

Left to Right:
Arthur D. Moor - National President
Howard Rice - Decatur President
Arthur M. Brereton - Decatur Vice-President

Left to Right:
Albert Sanders, John Garrett, Don Kuchenbuch, Henry Karr, Larry Whiting, Cecil Henriquez, David Christopher and David Potter.

The 38th Chapter of NSBB was officially presented its charter by ARTHUR D. MOOR, National President. This group started operations with twelve charter members and HOWARD D. RICE, Asst. Controller of Lincoln Division, Lehn & Fink Products Corp. will serve as its first President. Other officers are ARTHUR M. BRERETON, Vice-President; WILLIAM E. THOMAS, JR., Secretary, and JOHN M. CARROLL, Treasurer. The latter three officers are respectively associated with Marvel-Schebler Products Div., University of Illinois and Weaver Mfg. Div.

Other Charter Members are:

ROBERT E. BILLIG	- Pittsburgh Plate Glass Co.
WARREN H. KELLY	- Sangamo Electric Co.
RAYMOND E. PINKLEY	- Murphey, Turnbull & Jones, CPA's.
CLINTON L. WHITROCK	- Caterpillar Tractor Co.
RAY E. WILSON	- Caterpillar Tractor Co.
ROBERT W. MALLOW	- The Mueller Co.
DONALD G. BRADY	- Gauger & Diehl, CPA's.
RICHARD L. CASTLEMAN	- Gauger & Diehl, CPA's.

Western Florida, the 39th Chapter of NSBB was presented its charter by LARRY WHITING, a Director of NSBB. The Florida Chapter has eleven charter members. Seven of these are pictured in the snapshot of the charter presentation.

The complete list of charter members include the following.

BENJAMIN S. HAND	- Montgomery Ward Co.
CECIL HENRIQUEX, JR.	- Holsum Bakers, Inc.
WILLARD N. BEECHER	- Minneapolis-Honeywell Regulator Co.
DAVID L. CHRISTOPHER	- Shoreline Enterprises of America, Inc.
HENRY J. KARR	- Davison Chemical Div. - W.R. Grace & Co.
DON KUCHENBUCH	- Anheuser-Busch, Inc.
ALBERT J. SANDERS	- Florida Power Corp.
GEORGE BEWICK	- International Resistance Co.
DAVID K. POTTER	- Crown Cork & Seal Co., Inc.
JOHN L. GARRETT	-
LEONARD J. STEIN	- Continental Can Co.

The Chattanooga Chapter reports the addition of two new charter members. They are: WILBUR R. POWELL, Spec. Prods. Co. of Tenn., Inc., and MELVIN M. CONNER, Ross-Meehan Foundries.

WELCOME NEW MEMBERS

T. J. AHLBERG — Treasurer, Row Peterson & Co., Evanston, Illinois

MELVIN J. SOBERG — Controller, The Imperial Brass Mfg. Co., Chicago, Illinois

ALEXANDER R. THOMSON — Controller, American Photocopy Equipment Co., Evanston, Illinois

NED C. WHITMORE — Corp. Planning Dir., Allstate Insurance Co., Skokie, Illinois

KEITH A. POPE — Corp. Accountant, Outboard Marine Corp., Waukegan, Illinois

EDWIN J. GEERS — Comptroller, Central States Paper & Bag Co., St. Louis, Mo.

HARRY C. KUELKER — Mgr. Budgets & Statistics, Grove Laboratories, Inc., St. Louis, Mo.

DAN BJELETICH — Supervisor of Budgets & Overhead, Bell Helicopter Assn., Hurst, Texas

JOSEPH G. CALAMORE — V.P. & Treas., Pratt & Whitney Co., Inc., West Hartford, Conn.

ALFRED A. MANGIAFICO — Staff Accountant-Budget & Forecast, Pratt & Whitney Co., Inc., Hartford, Conn.

JOSEPH E. DRUFKE — Budget Manager, Chicago Aerial Industries, Inc., Melrose Park, Ill.

VINCENT SODARO — Cost Accountant, Celotex Corp., Chicago, Ill.

CHARLES G. EDGE — Asst. Treas., Chemcell, Ltd., Montreal, Quebec, Canada

LYNN R. STEVENER — Section Chief-Accounting Dept., Dr. Pepper Co., Dallas, Texas

WILHO E. AHOLA — Mgr. Financial Analysis, Kaiser Steel Corp., Oakland, California

ROBERT W. JOHNSON — Mgr. Management Services, Touche, Ross, Bailey & Smart, San Francisco, California

RICHARD L. THOMPSON — Supv. Budgets & Cost Analysis, Chrysler Corp., Detroit, Michigan

RICHARD A. ROMER — Controller, WalMet Alloys Co., Madison Heights, Michigan

EDWARD H. BILL, JR. — Management Services Div., Ernst & Ernst, Hartford, Conn.

HENRY F. SCOTT — Asst. Comptroller, Automatic Transportation Co., Chicago, Ill.

C. LEONARD BEDSAUL — Exec-Secy-Business Dept., International Walther League, Chicago, Ill.

LEIGHTON T. BROWN, JR. — Treasurer, Kaumagraph Co., Wilmington, Dela.

ROBERT N. MATTINGLY — Controller, Hussman Refrigerator Co., St. Louis, Mo.

THOMAS D. RODMAN — Asst. Controller, Missouri Pacific Railroad Co., Florissant, Mo.

CLARENCE D. MALUCHNIK — Staff Accountant, The Goss Co., Div. Miehle-Goss-Dexter, Inc., Chicago, Ill.

SHERMAN W. KENNEDY — Budget Manager, Sealright-Oswego Falls Corp., Fulton, New York

CHARLES L. CLARK — Auditor and Asst. Secy., H. S. Crocker Co., Inc., San Francisco, Calif.

DONALD P. SKOVE — Mgr. of Planning, Harris-Intertype Corp., Cleveland, Ohio

WILLIAM M. LEWIS — Asst. to Controller, Joseph Horne Co., Pittsburgh, Pa.

C. G. DAVISON — Supervisor of Cost Planning, Pittsburgh Plate Glass Co., Bethel Park, Pa.

G. HOWARD ARENSBERG, JR. — Staff Asst.-Comptroller's Office, Mellon National Bank & Trust Co., Pittsburgh, Pa.

RICHARD E. VINCENT — Budget Director, Carr Fastener Co., Div. United-Carr Fastener Corp., Cambridge, Mass.

WILLIAM GAYTHWAITE — Superintendent-Expense Analysis Dept., Employers' Group of Insurance Companies, Boston, Mass.

PETER JAMES MATHER — Controller, Hydreco Div., Kalamazoo, Michigan

C. T. DICKSON — Budget Services Manager, Arizona Public Service Co., Phoenix, Arizona

RICHARD L. STAHLBERG — Budget Supervisor, California Bank, Los Angeles, California

JERRY W. WARE — Administrator-Operating Budgets, National Broadcasting Co., Burbank, California

DAVID HARRY COOL — Supervisor of Profit Analysis, Avco Corp., Crosley Div., Cincinnati, Ohio

WALTER E. TRASK — Secy-Treas., Kitchens of Sara Lee, Inc., Glencoe, Illinois

EUGENE E. HEMMING — Mgr. of Cost Accounting & Payroll - Kitchens of Sara Lee, Inc., Chicago, Ill.

EDWARD J. BLAKE — Corporate Controller, Morris B. Sachs, Inc., Chicago, Ill.

STEPHEN I. FINNEY — Partner, Touche, Ross, Bailey & Smart, Chicago, Ill.

GEORGE E. DAWKINS — Accounting Section Chief, Dr. Pepper Co., Dallas, Texas

R. L. BRADSHAW — Chief Accountant, Lone Star Boat Co., Grand Prarie, Texas

DONALD F. KEILS — Budgets & Cost Supervisor, Valley Metal Products Co., Plainwell, Michigan

ALMA M. MULES — Asst. Treasurer-Asst. Controller, The Baltimore Business Forms Co., Baltimore, Md.

WILLIAM E. EAGAN — Specialist-Measurements & Business Planning, General Electric Co., Cincinnati, Ohio

JAMES L. TURPIN — General Acct.-Credit Mgr., Spice Islands Co., South San Francisco, California

JOHN J. DWAN — Supervisor-Financial Forecasting & Budgeting, Chandler Evans Corp. & Colts Patent Fire Arms Mfg. Co., Inc., West Hartford, Conn.

MYRLE A. VALLO — CPA, Frank R. Somers & Co., Dayton, Ohio

D. N. SALERNO — Controller, International Resistance Co., St. Petersburg, Fla.

NATIONAL OFFICERS — 1960–61

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Vice President	—	Donald E. Bacon	—	Calumet Region Chapter
Secretary - Treasurer	—	Bernard W. Schaller	—	Twin Cities Chapter

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Region II	—	Henry K. Wallstrom	—	Detroit Chapter
Region III	—	Neil F. Denen	—	Tri Cities Chapter
Region IV	—	Walter A. Verbeck	—	Fox River Valley Chapter
Region V	—	Frank Judd	—	Louisville Chapter
Region VI	—	H. Richard Hawley	—	San Francisco Chapter

Two Year Directorships

Region I	—	Jack L. Selkowitz	—	New York City Chapter
Region II	—	Henry M. Leigh	—	Cleveland Chapter
Region III	—	Vern K. Kowalsky	—	Twin Cities Chapter
Region IV	—	Charles S. Holsteen	—	Chicago Chapter
Region V	—	Charles W. Kessler	—	Atlanta Chapter
Region VI	—	John B. Morgan	—	San Diego Chapter